

CLAIMS

*Sub B6*

1. An improved restorer DNA comprising a barstar DNA, which, when expressed in a plant cell, is capable of improved inhibition of barnase, wherein said barstar DNA has an AT content of less than 40%.

2. The DNA of claim 1, wherein said barstar DNA has a codon usage that is optimized for oilseed rape, cotton, maize, rice and wheat.

3. The DNA of claim 1, wherein said barstar DNA contains no more than 7% CG dinucleotides and contains no more than 9.5% CNG trinucleotides.

4. The DNA of claim 1, wherein said barstar DNA has the nucleotide sequence comprising the fragment of SEQ ID No. 3 between positions 7 and 273, wherein said fragment is immediately preceded by ATG.

5. The DNA of claim 1, wherein said barstar DNA encodes a barstar with an amino acid sequence that starts with Met-Ala.

6. The DNA of claim 1, wherein said barstar DNA encodes a barstar having the amino acid sequence of SEQ ID No. 4.

7. A process for improving inhibition of barnase in a plant cell, said process comprising introducing a chimeric gene comprising the DNA of any one of claims 1 to 6, operably linked to a plant-expressible promoter, into a plant line.

8. The process of claim 7, wherein said plant-expressible promoter is a promoter that directs transcription at least in tapetum cells of a plant.

9. The process of claim 8, wherein said promoter is the promoter of the TA29 gene of tobacco, the promoter of CA55 gene of corn or the promoter of the E1, the T72 or the T42 of rice.  
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10. The process of claim 7, wherein said promoter is a constitutive promoter.

11. The process of claim 10, wherein said promoter is a 35S promoter.

12. The process of claim 7, wherein said plant cell also comprises a barnase DNA.

13. A plant comprising a DNA comprising a barstar DNA encoding a barstar, which, when expressed in a plant cell together with barnase, is capable of improved inhibition of barnase, wherein said DNA comprises the sequence of any one of claims 1 to 6.

14. The plant of claim 13, which is an oilseed rape, cotton, maize, rice or wheat plant.